



# Computing Knowledge Organiser—Year 5 We are Game Developers



## Key Knowledge

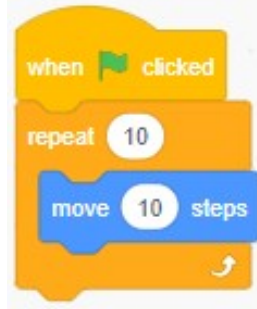
### Variables, Sequence and Selection

**Variables** are data that can change and this data can be used to store information or cause a **line of code to activate**. A piece of **code** will follow a **sequence** of events from start to finish. If a **variable** is being used, it may be that a piece of code only starts when a **variable** changes to a specific number. In this case, when the variable reaches 5 the code will move the **sprite** to a random position. The computer will use **selection** to decide what piece of **code** needs to activate. It will do this by looking at what number the **variable** is currently at, as well as paying attention to any other instructions such as **repetition** (see below).



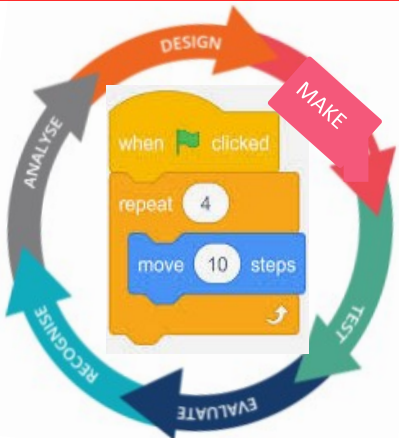
### Repetition

Using a **repeat** block will repeat the **code** that is contained within it. This can keep **lines of code** shorter, which saves time and can make it easier to **debug**. This is useful if we want the computer program to **repeat a line of code** for a set number of times. We can also ask it to **repeat the line of code forever**. This can be linked to a **variable** or a command which will **tell the code when to start repeating**.



### Debugging cycle and Logical Reasoning

The **debugging cycle** helps us to check our code for errors and then fix them. This can be used with **logical reasoning** to **focus on the part of code that needs fixing**. For example, if our code is moving the right number of steps but not **repeating** enough times, we know that the steps block is working but the repeat block isn't. We can then follow the **debugging cycle** again to check to see if we have fixed the bug. (Design—Make—Test—Evaluate—Recognise—Analyse)



## Key Vocabulary

### Coding

Computer programmes are made using a special language called code. Coding is used so computers understand what to do.

### Debug

Finding an issue in a programme and repairing it.

### Input

Data that a computer receives.

### Output

Data that a computer sends.

### Sequence

A series of events that must be performed in order to achieve a task.

### Variables

Something that can be changed. Variables are used to store information that might change and can be used later in a program. E.g. player scores.

### Logical reasoning

Step by step thinking. Used to think how a code may work and also how to detect errors in code. Used to plan and fix code.

### Selection

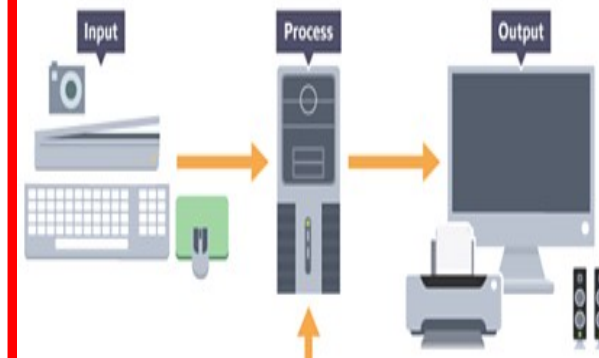
How a computer executes a set of instructions depending on if certain conditions have been met or not. E.g. a button pressed or a variable reached.

### Repetition

The process of looping or repeating sections of a computer program.

### Sprite

A codable graphic designed to be part of a larger image.



### Input and Output

We can **input** information into a computer which can **affect the output** the computer produces.